بسم الله الرحمن الرحيم

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

قسم

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بالرسالة صفحات لم ترد بالاصل

RANDAN study of invasive bacterial infections in children aged from 1- 60 months in Suez governorate

Thesis

Submitted for partial fulfillment of Master Degree in Tropical and Infectious Diseases

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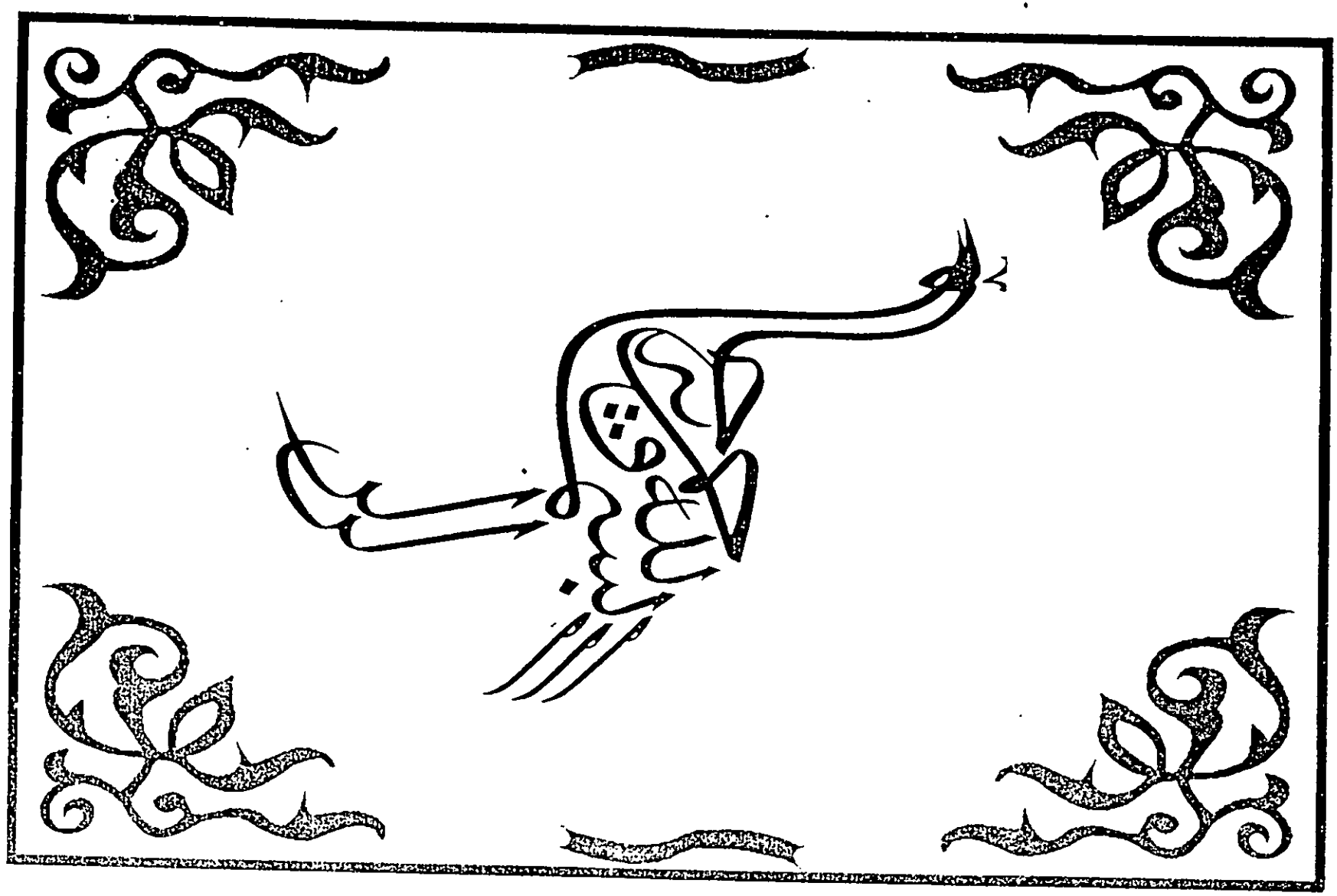

ACKNOWLEDGEMENT

I would like to express my deepest thanks and gratitude to **Dr. Amr A. Hassan,** Assisstant. Prof. Of Tropical medicine and Infectious Diseases, Faculty of Medicine, Suez Canal University for his kind supervision, keen guidance and continuous encouragement through this work.

I am also greatly thankful to Prof. **Dr. Mohammed F.A.F. Ali**, Professor of Microbiology Faculty of Medicine, Suez Canal University, for his persistent help, generous cooperation and valuable advice.

I wish also to express my gratitude to **Dr. Mohammed E. El-Kalioby,** Assisstant. Prof. of Pediatrics, Faculty of Medicine, Suez Canal University, for his kind helps and support.

I wish to express my gratitude to **Dear Colleagues** in Department of Pediatric in the General Hospital, in the Fever Hospital and in the Communicable Diseases Research & Training Center (CDRTC), for their persistent help, generous cooperation and valuable advice.

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Introduction

Introduction

Pneumococci and *H.influenza* infections are known to cause substantial morbidity and mortality in infants and children aged blow 5 years in developing Countries (Gwatkin, 1998). These pathogens are important causes of pneumonia, septicemia, meningitis, and other invasive infection in children (Grant, 1997).

Acute respiratory infections (ARI) are estimated to account for over 4 million child hood deaths each year. Pneumonia account for up to 30% of infants and children deaths and up to 75% of deaths form ARI. In developing countries every 7 seconds a child under 5 years of age dies because of ARI usually pneumonia (Leowski, 1996).

Acute Respiratory Infections are a leading cause of morbidity and mortality among Egyptian children (under five years of age). Most (ARI) death result from pneumonia which commonly has bacterial etiology .The ARI cause about 33% of the infants mortality, and represent 31.5% of morbidity causes in preschool children. ARI also accounts for about 50% of visits to pediatric out patient clinics (CAMPAS. Report, 1996 and CRS. report of the National ARI. Program 1997).

The Mortality rates of bacterial meningitis ranges from 13-60% in different parts of worlds (Wright, 1995) .In Egypt bacterial meningitis mortality was 40.6% and at least 30% of the survivors are discharged with significant sequelea (Girgis *et al*, 1996).

A case management protocol, when optimally applied has been effective in reducing childhood pneumonia - related mortality by 50% and overall childhood mortality by 25% in many hospitals in developing countries.

However, bacterial cultures are not routinely done and physicians are often forced to treat patients empirically, as a result there is very limited information regarding the burden of disease caused by bacterial agents specially *S.pneumonia* and *H. influenza,* their antibiotic resistance patterns, and the serotypes which are prevalent locally (Sazawal, 1996).

Data on the epidemiology of Antimicrobial resistant bacteria, specially *S. pneumonia* and *H. influenza* are needed to develop policies on rational antibiotic use. Optimal therapy would, however, require culturing these organisms by using appropriate techniques. While treatment of pneumonia clearly reduces the mortality rate from these severe infections, the most cost effective and definitive solution to these problems lies with development of vaccines, especially for the most important bacterial agents *S.pneumonia* and *H. influenza* (Funklouser, 1995).

The development of appropriate types of vaccines requires a clear information about the distribution of different serotypes of *S. pneumonia* and *H. influenza.* This coupled with an effective surveillance of antimicrobial susceptibility and serotypes of these agents will have a major impact in preventing these major childhood diseases (Steinhoff, 1996).

A number of studies from developed countries have identified the common serotypes and serogroups of *Pneumococci* and the *H.influenza* type b strains which has rendered intervention using available vaccines effective, however, comparable data is lacking from developing countries. There is much geographic and temporal variation in Pneumcoccal serotypes and groups distribution in children. The spectrum and incidence of invasive *H.influenza* disease in developing countries is not well characterized. The paucity of data regarding the distribution of these pathogens and their serotypes, as well as the lack of data in

seasonal variation in the occurrence of invasive diseases caused by these agents, is much more striking in the African setting. These data are necessary to estimate the potential effect of the currently known vaccines for these infections (Steinhoff, 1996).

There is, therefore, an urgent need to assess the distribution of these agents, the prevalence of the different serotypes, and their anti-microbial pattern, and identify the basic information about invasive *Pneumococal* and *H.influenza* infections for the development of effective and locally appropriate vaccines for use in our country.

Review of Literatures

Review of literature

Epidemiology of Acute lower Respiratory Infections (LRI) in Children in Developing Countries:

In developing countries every 7 seconds a child under 5 years of age dies because of an acute respiratory infection (ARI), usually pneumonia. ARI is responsible for four and a half million children deaths each year, accounting for 30% of all deaths in the childhood (Gwatkin 1998). Pneumonia unassociated with measles causes 70% of these deaths; post measles pneumonia, 15%; pertussis, 10%; and broncholitis or croup, 5% (World Health Organization, 1996). Review of the current information on the etiology of ARI in developing countries and the influence of several host and environmental risk factors on the incidence and severity of ARI revealed that:

Etiology

Viral and bacterial agents are responsible for the most cases of ARI. Viral agents cause the majority of ARI, but only a small percentage of these infections result in severe or fatal disease. Most viral infections are mild, self-limited illnesses involving the upper respiratory tract. Bacterial agents cause upper respiratory infections such as otitis media and pharyngitis, as well as pneumonia. While bacterial pneumonia is less common than viral lower respiratory infection (LRI), the risk of death is far greater with bacterial pneumonia. The estimated case- fatality rate for bacterial pneumonia due to *Streptococcus pneumoniae* and *Haemophilus Influenzae* in developing countries is 50 times higher than the case-fatality rate for infection due to respiratory syncytial virus (RSV) or